

SOIL SUCTION, WATER CONTENT, AND SPECIFIC VOLUME

For use of this form, see TM 5-818-7; proponent agency is US Army Corps of Engineers.

PROJECT _____		BORING/SAMPLE/DEPTH _____					DATE _____				
SOIL SUCTION	PSYCHROMETER NO.										
	SAMPLE CONTAINER NO.										
	WATER CONTENT INCREMENT (0, +, -)										
	THERMOCOUPLE OUTPUT	t, MILLIVOLTS									
		T*, °C									
	PSYCHROMETER OUTPUT	E _T , MICROVOLTS									
E _{25°C} , MICROVOLTS											
SOIL SUCTION †, TONS/FT ²			T								
WATER CONTENT	TARE NO.										
	WEIGHT IN GRAMS	TARE PLUS WET SOIL									
		TARE PLUS DRY SOIL									
		WATER	W _w								
		TARE									
		DRY SOIL	W _s								
WATER CONTENT, PERCENT			w								
WEIGHT-VOLUME RELATIONS	TEST TEMPERATURE OF WATER, °C										
	WEIGHT IN GRAMS	WET SOIL AND WAX IN AIR									
		WET SOIL	W								
		WAX									
		WET SOIL AND WAX IN WATER									
		DRY SOIL ††	W _s								
	SPECIFIC GRAVITY OF SOIL		G _s								
	VOLUME IN CC	WET SOIL AND WAX †									
		WAX									
		WET SOIL	V								
		DRY SOIL = W _s / G _s	V _s								
	DENSITY PCF	WET DENSITY = (W/V) 62.4	γ _m								
		DRY DENSITY = (W _s /V) 62.4	γ _d								
	VOID RATIO = (V - V _s) / V _s		e								
	POROSITY, % = [(V - V _s) / V] x 100		n								
	DEGREE OF SATURATION, % = [V _w / (V - V _s)] x 100		s								
SPECIFIC VOLUME = 1/γ _d		v _T									
<p>* T °C = t/0.0395</p> <p>** E₂₅ = E_T / (0.325 + 0.027T)</p> <p>† SEE INDIVIDUAL PSYCHROMETER CALIBRATION LINE</p> <p>†† IF NOT MEASURED DIRECTLY, MAY BE COMPUTED AS FOLLOWS: W = $\frac{W}{1 + 0.01 W}$ VOLUME OF WAX = $\frac{\text{WEIGHT OF WAX}}{\text{SPECIFIC GRAVITY AT WAX}}$</p> <p style="text-align: right;"> † VOLUME OF WET SOIL AND WAX = $\frac{(\text{WEIGHT OF WET SOIL AND WAX IN AIR}) - (\text{WEIGHT OF WET SOIL AND WAX IN WATER})}{\text{DENSITY OF WATER AT TEST TEMPERATURE}}$ </p>											